PRE-APPEAL BRIEF REQUEST FOR REVIEW

	Docket Number (Optional)
	hunteb01.007

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]	Application Number	Filed
on 1/6/2008	10/018,696	12/13/2001
Signature /Gordon E. Nelson/	First Named Inventor Brian A. Hunter	
Typed or printed name Gordon E. Nelson	Art Unit 3693	Examiner Khattar, Rajesh

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
   Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant/inventor.

- [ ] assignee of record of the entire interest.
  See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
  (Form PTO/SB/96)

- [✓] attorney or agent of record.   Registration number 30,093

- [ ] attorney or agent acting under 37 CFR 1.34.
  Registration number if acting under 37 CFR 1.34

/Gordon E. Nelson/
_____
Signature

Gordon E. Nelson
_____
Typed or printed name

978-948-7632
_____
Telephone number

January 7, 2008
_____
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

[✓] *Total of 1 forms are submitted.

NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES	Docket Number (Optional) hunteb01.007

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Filed by EFS	In re Application of Brian A. Hunter, et al.
	Application Number 10/018,696	Filed 12/13/2001
Signature_____	For Resource allocation techniques
Typed or printed name_____	Art Unit 3693	Examiner Khattar, Rajesh

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ $500.00

☑ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced
   by half, and the resulting fee is $ $250.00

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
   I have enclosed a duplicate copy of this sheet.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment
   to Deposit Account No. 501315   I have enclosed a duplicate copy of this sheet.

☑ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

   **WARNING: Information on this form may become public. Credit card information should not
   be included on this form. Provide credit card information and authorization on PTO-2038.**

I am the

☐ applicant/inventor.   /Gordon E. Nelson/
                                                           Signature
☐ assignee of record of the entire interest.   Gordon E. Nelson
   See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.   Typed or printed name
   (Form PTO/SB/96)
☑ attorney or agent of record.   978-948-7632
   Registration number 30,093   Telephone number
☐ attorney or agent acting under 37 CFR 1.34.   01/07/2008
   Registration number if acting under 37 CFR 1.34. _____   Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below"

☑ *Total of 1 1   forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(hunteb01.007)

5	**Applicant:**	Hunter, et al.	**Confirmation No.:** 5130
	Application No:	10/018,696	**Group Art Unit:** 3693
	Filed:	12/13/2001	**Examiner:** Khattar, Rajesh
10			

Title: *Resource allocation techniques*

Commissioner for Patents
Alexandria, VA 22313-1450

Brief for a Pre-appeal Brief Conference

Background

This application is the U.S. National Stage of PCT/US01/00636, filed 9 January 2001 and claiming priority from U.S. Provisional Patent Application 60/175,261, filed 10 January 2000. The claims under final rejection are claims 19-26. In rejecting the claims, Examiner combined the publication, Kaplan, Paul, "Asset allocation models using the Markowitz approach", having a date of 1998 (hereinafter "Kaplan") with U.S. Patent 6,321,212, Lange, *Financial products having a demand-based, adjustable return and trading exchange therefor*, having a filing date of November 24, 1999 (hereinafter "Lange") to reject claims 19, 20, and 25-26 and combining Kaplan, Lange, and Ross, Westerfield, and Jaffe, *Corporate Finance*, fourth edition, 1996, Chapter 10, "Return and Risk" (hereinafter "Corporate Finance") to reject the remaining claims.

Issue

The issue between Examiner and Applicants is whether Lange discloses claim 1's limitation,

> in the linear optimization program, using a real option function to
> determine valuation for each asset class over the period of time
> for a particular allocation of the funds to the asset class

Resolving the issue involves interpretation of the meaning of "real option" in Lange and in Applicants' Specification. As will be shown in the following, in Lange, the term "real option" means a *qualitative* technique for analyzing investment and capital funding choices faced by firms; In Applicants' Specification, the term "real option" means a

5 *quantitative* technique for allocating investment funds among asset classes. *Because* Applicants' real option technique is *quantitative*, the limitation can include a "real option *function*". Further, *because* Lange's real option is *qualitative*, Lange cannot and does not disclose the limitation's "real option function".

10 Real options in Applicants' Specification

Real options are explained at page 2, lines 11-21 of Applicants' Specification as follows:

The advantage of the real option model is that it takes better account of
uncertainty ... because things are uncertain, the risk and return for an
action to be taken at a future time is constantly changing. This fact in turn
15 gives value to the right to take or refrain from taking the action at a future
time. Such rights are termed *options*. Options have long been bought and
sold in the financial markets. The reason options have value is that they
reduce risk: the closer one comes to the future time, the more is known
about the action's potential risks and returns. Thus, in the real option
20 model, the potential value of a resource allocation is not simply what the
allocation itself brings, but additionally, the value of being able to
undertake future courses of action based on the present resource
allocation.

25 A technique for calculating the value of a real option using the Black-Scholes formula is presented at page 7, line 26-page 8, line 12. Page 8, lines 13-16 further show how an optimization program can be used to maximize the real option value of a portfolio.

As is abundantly clear from the foregoing, the real options of Applicants' Specification
30 have prices, i.e., they have *quantitative values*. Indeed, it is *because* real options have quantitative values that a function which computes real option values can be used as the objective function in an optimization program.

"Real options" in Lange

Lange is a patent with 112 columns of Specification. The only mention of real options in the patent is at col. 57, line 54-col. 58, line 8, which is the location cited by Examiner in his rejection. What Lange is principally concerned with is creating and establishing a market for what Lange terms "demand based adjustable return contingent claims" or DBARs. As set forth at col. 7, lines 19-30 and col. 8, lines 18-28, a DBAR contingent claim is a claim which has states that depend on an observable event. The DBARs have fixed prices and are sold in groups; a purchaser pays the fixed price and selects a state in which the claim will pay the purchaser. When the observable event occurs, the state of the DBARs resulting from the observable event is determined and all of the money received for the DBARs in the group is paid out to the holders of the DBARs who selected that event.

At the location cited by Examiner in his rejection of claim 19, Lange describes "real option analysis" (Lange, col. 57, line 54-col. 58, line 8).

> Investment and capital budgeting choices faced by firms typically involve inherent economic risk (e.g., future demand for semiconductors), large capital investments (e.g., semiconductor fabrication capacity) and timing (e.g., a decision to invest in a plant now, or defer for some period of time). Many economists who study such decisions under uncertainty have recognized that such choices involve what they term "real options." This characterization indicates that the choice to invest now or to defer an investment in goods or services or a plant, for example, in the face of changing uncertainty and information, frequently entails risks similar to those encountered by traders who have invested in options which provide the opportunity to buy or sell an underlying asset in the capital markets. Many economists and investors recognize the importance of real options in capital budgeting decisions and of setting up markets to better manage their uncertainty and value. Natural resource and extractive industries, such as petroleum exploration and production, as well as industries requiring large capital investments it such as technology manufacturing, are prime examples of industries where *real options analysis* is increasingly used and valued. (emphasis added)

Clearly, the "real options" in Lange's "real options analysis" are different from the "real options" described at page 2, 11-21 of Applicants' Specification. Where the difference lies becomes clearer on reading the next paragraph of Lange's Specification, which describes how DBARs can be used in real options analysis:

> Groups of DBAR contingent claims according to the present invention can be used by firms or firms within a given industry to better analyze capital budgeting decisions, including those involving real options. For example, a group of DBAR contingent claims can be established which provides hedging opportunities over the distribution of future semiconductor prices. Such a group of claims would allow producers of semiconductors to better hedge their capital budgeting decisions and provide information as to the market's expectation of future prices over the entire distribution of possible price outcomes. This information about the market's expectation of future prices could then also be used in the real options context in order to better evaluate capital budgeting decisions. (Lange, col. 58, lines 9-24)

Clearly, none of this has anything to do with claim 19's limitation of:

> in the linear optimization program, using a real option function to determine valuation for each asset class over the period of time for a particular allocation of the funds to the asset class

In particular, it is clear that Lange's "real option analysis" is *qualitative* rather than *quantitative*. there is simply no disclosure in Lange of anything like claim 19's limitation of "using a real option function to determine valuation for each asset class over the period of time for a particular allocation of the funds to the asset class". What DBAR contingent claims offer are first, ways of hedging the risk involved in capital budget decisions and second, additional information as to the market's expectation of future prices. A set of DBAR contingent claims is certainly not the claimed "real option function".

In his advisory action of 12/20/2007, Examiner grounds his rejection as follows:

> The way Lange is using the real option is not fundamentally different from the way the term is used in Applicant's claimed invention, as the real option feature is used to account for the uncertainty. Therefore, the combination of Kaplan and Lange when taken as a whole teaches the claimed invention.

The problem with this is that the limitation in question does not set forth the use of "the real option feature [] to account for the uncertainty", but rather something far more specific:

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>in the linear optimization program, using a real option function to
>determine valuation for each asset class over the period of time
>for a particular allocation of the funds to the asset class

5 Lange simply does not disclose the foregoing limitation. Because Lange does not disclose the limitation, Examiner has not made the *prima facie* case required for a rejection under 35 U.S.C. 103 and his rejection of claim 19 is without basis. As the Conferees will immediately understand, the same logic applies to the rejection of claim 25. Further, because independent claims 19 and 25 are patentable, so are all of the

10 dependent claims.

It should further be pointed out here that real options of the kind disclosed in Lange are substantially the same as the real options disclosed in the Van Mieghem reference. A rejection based on van Mieghen was successfully traversed by Applicants in their

15 response to the Office action of 04/02/2007 in this application. Van Mieghem's *Abstract*, cited in the rejection, sets forth the following:

>I develop a theory of investment in multiple real assets or "resources".
>This theory focuses on the interaction among uncertainty, irreversibility,
>investment timing, and multidimensionality within the investment
>20 portfolio. Using a "real options" approach, this work provides *qualitative*
>insights on the character of optimal investment strategies and special
>"hedging opportunities that arise in multi-dimensional models of real
>investments. (emphasis added)

25 Lange, like van Mieghem, uses real options in qualitative analysis rather than quantitative analysis. Consequently, the arguments made and accepted with regard to van Mieghem in Applicants' response of 6/27/2007 apply to Lange as well.

Conclusion

30 Applicants have demonstrated that Examiner has not made the required *prima facie* case of obviousness with regard to claims 19 and 25. Applicants consequently respectfully request that the Conferees overrule Examiner's rejection of claims 19 and 25 and either pass the application to issue or reopen prosecution. A *Notice of appeal* and a petition for a 1-month extension of time, together with the requisite fees, accompany this *Brief*.

35 Should further fees be required, please charge them to Deposit Account 501315.

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Respectfully submitted,

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